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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/664,323	09/18/2000	Shoji Karasawa	P19993.P06	4200

7055 7590 10/06/2003

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EXAMINER

TSANG FOSTER, SUSY N

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/664,323

Applicant(s)

KARASAWA ET AL.

Examiner

Susy N Tsang-Foster

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 12-35 is/are pending in the application.
- 4a) Of the above claim(s) 12-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 24-33 is/are rejected.
- 7) ☒ Claim(s) 34 and 35 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 17.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/27/2003 has been entered.

### ***Response to Amendment***

2. This Office Action is responsive to the amendment filed on 5/27/2003. Claims 24-26, 28-31, 34, and 35 have been amended. Claims 12-35 are pending. Claims 12-23 remain withdrawn from further consideration as being drawn to a non-elected invention. Claims 34 and 35 are objected to. Claims 24-33 are rejected for reasons below.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 29, and 31-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 29, the limitation “a plurality of bent portions, each bent portion of said plurality of bent portions respectively formed on an edge of said protruding edges” is indefinite because it is unclear what the bent portions are and whether or not they are part of the protruding edge of the positive or negative electrode plates.

In claim 31, the limitation “a plurality of bent portions, each bent portion of said plurality of bent portions respectively formed on a said edge of said plurality of positive electrode plates and said plurality of negative electrode plates, wherein not all of said bent portions on a said edge are uniform in length” is indefinite because it is unclear what the bent portions are and whether or not they are part of the protruding edge of the positive or negative electrode plates. Furthermore, in claim 31, it is unclear what the difference is between the lead portions and the bent portions and how the lead portions relate to the edges of the positive and negative electrode plates.

Claims depending from claims rejected under 35 USC 112, second paragraph are also rejected for the same.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 24-26 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Tsuda et al. (US 4,332,867).

See Figures 7 and 8; col. 1, lines 50-65; col. 2, lines 10-20; col. 7, lines 48-53 of the reference.

7. Claims 29 rejected under 35 U.S.C. 102(e) as being clearly anticipated by Oweis et al. (US 5,972,532).

See Figures 1 and 3; col. 1, lines 11-24; col. 2, lines 5-45; col. 4, lines 7-25; col. 5, lines 45-59 and col. 6, lines 37-38 of the reference.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuda et al. (US 4,332,867) in view of Coibion et al. (4,053,687).

The product-by-process limitations of claim 28 is not given patentable weight since the courts have held that patentability is based on a product itself, even if the prior art product is

made by a different process (see In re Thorpe, 227 USPQ 964, (CAFC 1985), In re Brown, 173 USPQ 685 (CCPA 1972), and In re Marosi, 218 USPQ 289, 292-293 (CAFC 1983)).

Tsuda et al. disclose all the limitations of claims 27 and 28 (see above) except that solder is used to bond the collector plates to the protruding edges of the electrode plate group.

Coibion et al. teach that welding or soldering can be used to connect a collector plate to each of the protruding edges of an electrode plate group (col. 2, lines 5-33) and that either welding or soldering provides for an effective electrical connection (col. 6, lines 44-46).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to solder the collector plates to the protruding edges of the electrode plate group instead of welding the collector plate to the protruding edges of the electrode plate group because soldering can be equivalently used as a technique to connect the collector plate to an electrode plate group of a battery and soldering provides for an effective electrical connection between the collector plate and the protruding edges of electrode plate group.

10. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuda et al. (US 4,332,867) in view of Oweis et al. (5,972,532).

Tsuda et al. disclose all the limitations of claim 30 (see above) except that a slit is formed on both the protruding edges of the positive electrode plate and the negative electrode plate (See Figures 7 and 8; col. 1, lines 50-65; col. 2, lines 10-20; col. 7, lines 48-53).

Oweis et al. teach forming slits at edges of an electrode plate and folding down the edges between two slits to form folded portions that define tab connections for a collector plate (col. 2,

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lines 5-26) in order to increase the area of contact between the electrode and collector plate (col. 41-55) which would improve current collection.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have slits formed on both the protruding edges of the positive electrode plate and the negative electrode plate of Tsuda et al. to form folded portions because the folded portions of the edge provides for an increased area of contact between the electrode plate edge and the respective collector plate that would improve current collection.

11. Claim 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oweis et al. (US 5,972,532) in view of Cheu (US 5,674,641).

Oweis et al. disclose all the limitations of claims 31 and 32 (see above) except that the lead portions comprise a locator in the form of a hole configured to position the edges of at least one of the positive electrode plate and the negative electrode plates with respect to the collector plate (Figures 1 and 3; col. 1, lines 11-24; col. 2, lines 5-45; col. 4, lines 7-25; col. 5, lines 45-59 and col. 6, lines 37-38).

Cheu teaches providing holes in the lead portions of the positive and negative electrode plates for aligning the lead portions (tabs) of the respective positive and negative electrode plates prior to fastening a collector plate to each electrode polarity (See Figures 1 and 5, and col. 7, lines 32-67).

It would have been obvious to one ordinary skill in the art at the time the invention was made to provide holes in the lead portions of the positive and negative electrode plates because the holes in the lead portions allows the lead portions to be aligned prior to them being connected to a collector plate.

12. Claims 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugikawa (US 5,655,295) in view of Oweis et al. (US 5,972,532) and Cheu (US 5,674,641).

Sugikawa discloses a battery comprising an electrode plate unit where the electrode plate unit includes a plurality of positive electrode plates and a plurality of negative electrode plates that are alternately stacked upon one another with intervening separators therebetween and lead portions of each of the plurality of positive electrode plates and lead portions of negative electrode plates extending along a respective edge of the electrode plate unit; a collector plate respectively attached to the lead portions of the plurality of the positive electrode plates and to the lead portions of the plurality of negative electrode plates; and the lead portions of the plurality of positive electrode plates and the plurality of negative electrode plates comprise a reinforcing material in the form of solid metal 15 (col. 1, lines 54-67; col. 6, lines 49-67; col. 7, lines 1-33; Figures 1A, 1B, 2, and 13)

Sugikawa does not disclose either a plurality of bent portions that are unequal in length are respectively formed on an edge of the plurality of positive electrode plates and the plurality of negative electrode plates or that the lead portions of the positive and negative electrode plates include a locator in the form of a hole for positioning the edges of the positive or negative electrode plates with respect to the collector plate.

Oweis et al. teach a plurality of bent portions that are unequal in length respectively formed on an edge of the plurality of positive electrode plates and the plurality of negative electrode plates that are offset from each other in a spiral wound assembly wherein the bent portions increase the contact area between the collector (contact tab) and the electrode as



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compared to contacting the collector with only the edge portion of the electrode (col. 1, lines 5-23, col. 2, lines 1-34; col. 4, lines 42-47, col. 5, lines 30-65; and col. 6, lines 37-45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide bent portions that are unequal in length on an edge of the plurality of positive electrode plates and on an edge of the plurality of negative electrode plates of the electrode plate unit of the battery of Sugikawa because the bent portions increase the contact area between a collector and the respective electrode as compared to contacting the collector with only the edge portion of the electrode.

Cheu teaches providing holes in the lead portions of the positive and negative electrode plates for aligning the lead portions (tabs) of the respective positive and negative electrode plates prior to fastening a collector plate to each electrode polarity (See Figures 1 and 5, and col. 7, lines 32-67).

It would have been obvious to one ordinary skill in the art at the time the invention was made to provide holes in the lead portions of the positive and negative electrode plates because the holes in the lead portions allows the lead portions to be aligned prior to them being connected to a collector plate.

***Allowable Subject Matter***

13. Claims 34 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter:

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The closest prior art of record, Tsuda et al. (US 4,332,867) does not disclose, teach, or suggest a planar portion extending between the adjacent parallel channels of the collector plate.


***Conclusion***

Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (703) 305-0588. The examiner can normally be reached on Monday through Friday from 9:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (703) 308-2383. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

st/ 

Susy Tsang-Foster  
Primary Examiner  
Art Unit 1745